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International application number: PCT/GB05/001038

International filing date: 18 March 2005 (18.03.2005)

Document type: Certified copy of priority document

Document details: Country/Office: GB  
Number: 0421090.2  
Filing date: 22 September 2004 (22.09.2004)

Date of receipt at the International Bureau: 24 May 2005 (24.05.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



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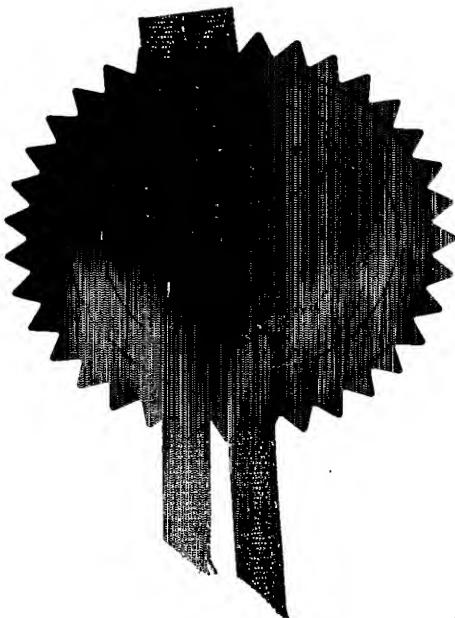
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NG/23204

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0421090.2

22 SEP 2004

3. Full name, address and postcode of the or of each applicant (underline all surnames)

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Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8836272001

4. Title of the invention

CLEANING APPARATUS

5. Name of your agent (if you have one)

A A THORNTON & CO

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

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75001 /

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Date of filing  
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GB

0406703.9

25/03/04

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Number of earlier application

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# Patents Form 1/77

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Description 5

Claim(s) 2

Abstract - DL

Drawing(s) 2 + 2

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Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

9/77

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21/09/04

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NIGEL GOODENOUGH - 01604 638242

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## CLEANING APPARATUS

This invention relates to cleaning apparatus, and in the preferred embodiment provides a simple and robust apparatus for cleaning dirt from the wheels of a trolley, particularly but not exclusively a golf trolley.

Golf trolleys, consisting of a frame mounted on a pair of wheels and supporting a bag, are commonly used for the transporting of golf clubs around a golf course. As a result of normal usage it is common for the wheels particularly of such golf trolleys to be soiled by mud and/or grass cuttings. If the golf trolley is brought indoors (at a clubhouse or at home) or placed in a car for transport purposes, dirt from the wheels is liable to soil the surfaces upon which the trolley is placed. Further, unless the dirt is cleaned off immediately after use it is liable to dry on the wheels and detract from the appearance of the trolley.

It is known to use a conventional hosepipe for washing dirt from the wheels of a trolley, but such an arrangement is generally unsatisfactory. A conventional hand held hose is not, in fact, very effective at removing dirt and unless used with great care is liable to wet the bag which is undesirable.

Accordingly, the need exists for apparatus to provide simple, effective and automatic washing of the wheels of a golf trolley.

Accordingly, one aspect of the present invention provides cleaning apparatus for cleaning the wheels of a trolley, the apparatus comprising: a base having a support surface along which the trolley may be wheeled; a wall structure extending upwardly from each side of the support surface; a roof extending outwardly from each wall towards the other wall; a skirt extending downwardly from the edge of each roof which is remote from the wall associated with that roof whereby that wall and its associated roof and skirt form a hood which is open at one end; and water jets located in each hood for cleaning portions of a wheel located within the hood.

The cleaning apparatus of the preferred embodiment is configured so that the

spacing between the hoods is sufficient to allow the body of a golf trolley to pass therebetween whilst the wheels move along the support surface with the upper parts of the wheels located within the hoods. Preferably, the hoods are open at both ends so that the trolley may be wheeled through the cleaning apparatus in a single continuous movement. As the wheels pass through the hoods they will rotate by virtue of the forward movement of the trolley and as a result each part of each wheel will, in turn, be subject to cleaning by the water jets.

Accordingly, the preferred embodiment of the present invention provides a simple and effective mechanism for removing dirt from the wheels of a trolley simply by wheeling the trolley along a defined support surface with the wheels partially contained within the hoods.

The hoods are effective to prevent significant wetting of any part of the trolley other than the wheels.

Preferably, a plurality of water jets are provided along the length of each hood. Preferably, two sets of water jets are associated with each hood, one at the juncture of the wall and the roof and the other at the juncture of the roof of the skirt. With such an arrangement, both the inside and outside surfaces of each wheel, as well as the tread, will be cleaned as the wheel passes through the hood.

Preferably, the support surface is perforated and in the preferred embodiment is provided by a mesh support which allows ready draining of water. Water draining through the mesh support is preferably collected in a tray forming part of the cleaning apparatus, and may be recycled for further cleaning operations or discarded to a suitable drain.

Preferably, automatic means are provided for detecting the presence of a trolley and turning on the water jets. Such means may, for example, be provided by a proximity sensor or a photoelectric sensor. Accordingly, the apparatus may sit in a quiescent state with no water flowing through the jets and may be automatically started by the simple action of pushing a trolley onto the support surface. Preferably, the jets are supplied from a high pressure water source, for example a positive

displacement pump.

In a particularly preferred embodiment of the invention an auxiliary cleaning facility is provided for cleaning golf clubs. This auxiliary facility may comprise a receptacle into which the heads of clubs may be placed individually or as a group, the receptacle being furnished with water jets for removing dirt from the club heads. In a particularly preferred embodiment of the invention the receptacle is in the form of a trough into which the heads of a plurality of clubs may be placed simultaneously.

The invention will be better understood from the following description of a preferred embodiment thereof, given by way of example only, reference being had to the accompany drawings wherein:

Figure 1 illustrates schematically a preferred embodiment of the present invention;

Figure 2 illustrates schematically a water jet arrangement of the embodiment of Figure 1; and

Figure 3 illustrates the embodiment of Figure 1 in use for cleaning the wheels of a golf trolley.

Referring firstly to Figure 1, the illustrated cleaning apparatus 1 comprises a base 2 having a support surface 3. The support surface 3 is formed of a suitable mesh material and the base 2 is formed to define a tray under the mesh support surface. Accordingly, water and dirt falling on the mesh 3 will drain into the tray for disposal or recirculation.

At each edge of the support surface 3 a wall 4, 5 extends vertically upwardly to define a respective side surface 6, 7. At a distance  $h$  above the support surface 3 a roof 8 extends away from the wall 4 towards the wall 5 and a corresponding roof 9 extends away from the wall 5 towards the wall 4. At the edge 10 of the roof 9 which is remote from the wall 4 a skirt 11 is attached to the roof 6 and depends towards the support surface 3. Similarly, at the edge 12 of the roof 9 which is remote from the wall 5 a skirt 13 is attached to the roof 9 and depends towards the support surface 3. The wall 4, roof 8 and skirt 11 on the one hand and wall 5, roof 9 and skirt 13 on the other



hand form respective hoods 14, 15. The hoods are each open at both ends thereof so that the wheel having a diameter of less than  $h$  but greater than  $\frac{1}{2}h$  can be rolled along the support surface with the upper part of the wheel located within the hood.

Referring now to Figure 2, the structure of the hood 14 is shown in more detail. In practice, the hood will probably be fabricated from the non-transparent material and accordingly the internal components of the hood will not be visible from the perspective of Figure 2. However, for the purposes of illustration only the hood 14 as illustrated in Figure 2 as if it was formed of a transparent material.

Within the hood 14 are located two manifolds 16, 17 each of which is, in use, connected to a source of water under pressure. Each manifold includes a plurality of jets which, in use, form a plurality of sprays of water or other suitable cleaning material. The water may, if desired include a cleansing additive such as a detergent and may be derived directly from the mains, from a suitable source of non-potable water or by recirculation of water from the trough beneath the support surface 3. The arrangement under the hood 15 is the mirror image of the arrangement under the hood 14.

Referring now to Figure 3, the device of Figure 1 is shown in use. A golf trolley 20 comprising a frame 21, a bag 22, and wheels 23, 24 is positioned to stand on the support surface 3. As can be seen from Figure 3, the wheels 23, 24 are located such that the upper part of each wheel is located inside of an associated respective hood 14, 15. The bag, and remaining portions of the frame, are located between the skirts 11, 13 or above the level of the hoods 14, 15. It will be readily apparent that with the apparatus operating and jets of water discharging from the manifolds 16, 17, as the trolley is wheeled along the support surface 3 the wheels will be cleaned. Because the hoods 14, 15 are open at each end the trolley may be wheeled through the machine in a single continuous action.

In a preferred embodiment of the invention automatic means are provided for switching the machine on as a trolley is placed on the support surface 3. Such means may conveniently be proximity sensors or photoelectric sensors.

Referring again to Figure 1, the preferred embodiment of the invention incorporates means for cleaning the heads of golf clubs. Such means may comprise a trough 30 located on the opposite side of the wall 4 from the hood 14. The trough 30 incorporates one or more manifolds 31 to provide an inwardly and downwardly directed spray of suitable cleaning fluid. Clubs may be stacked in the trough 30 with the handles of the clubs supported by means of a suitable bar 32 and the machine actuated to spray water onto the club heads to clean them.

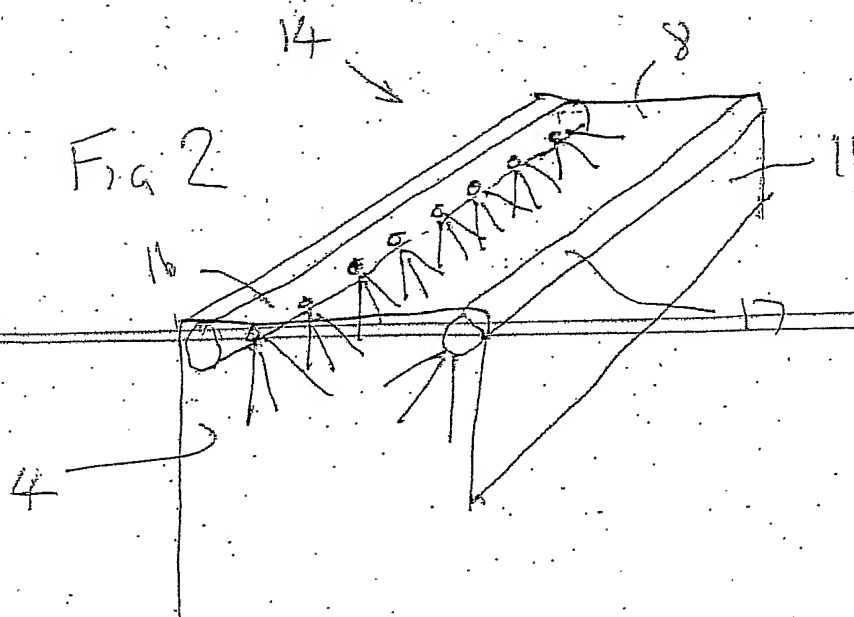
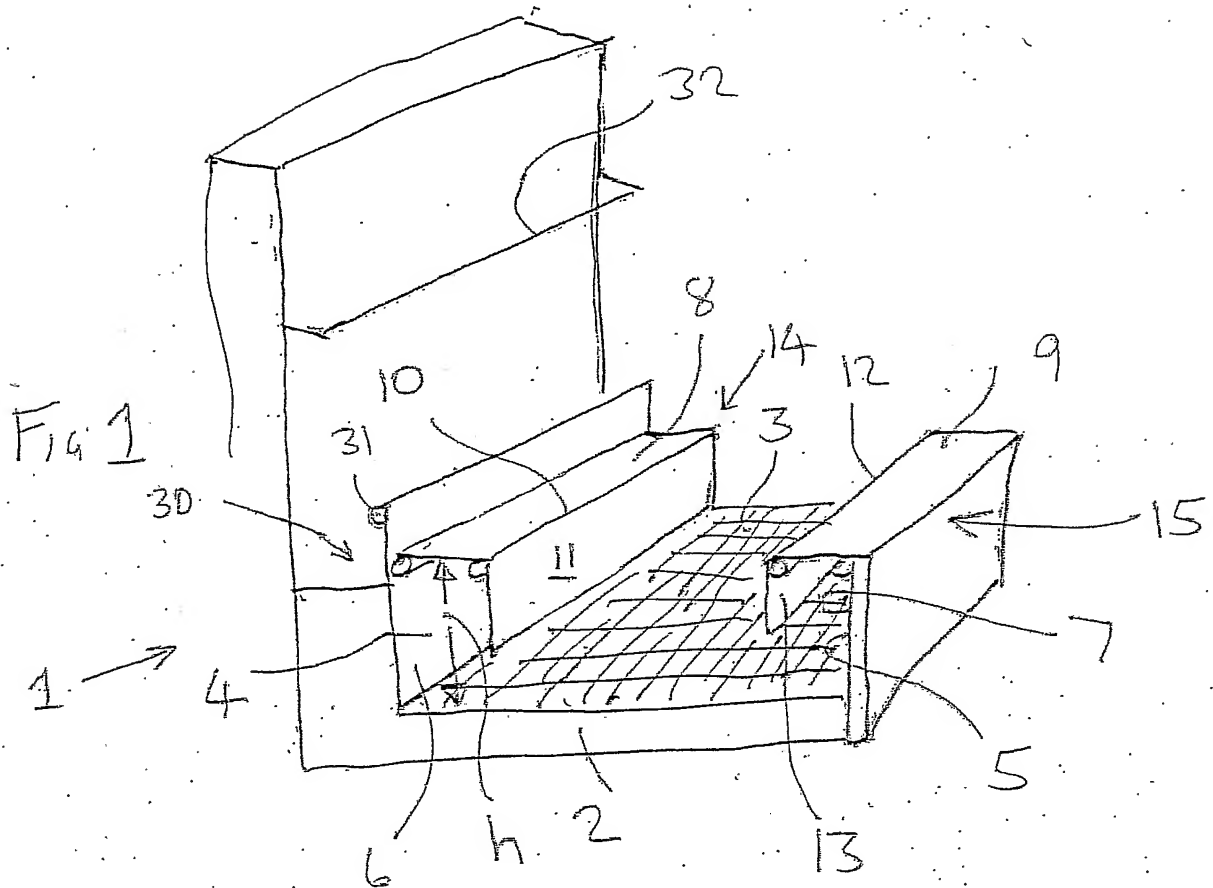
As an additional feature the invention may include means for assisting in the removal of dirt from the wheels, for example static or power driven brushes or compressed air jets. Additionally, a preferred embodiment of the invention may include means for at least partially drying the wheels and other wetted areas of the trolley. Such means may include, for example, hot or cold air blasts.

## CLAIMS:

1. Cleaning apparatus for cleaning the wheels of a trolley, the apparatus comprising:  
a base having a support surface along which the trolley may be wheeled; a wall structure extending upwardly from each side of the support surface; a roof extending outwardly from each wall towards the other wall; a skirt extending downwardly from the edge of each roof which is remote from the wall associated with that roof whereby that wall and its associated roof and skirt form a hood which is open at one end; and water jets located in each hood for cleaning portions of a wheel located within the hood.
2. Cleaning apparatus according to claim 1 wherein, both hoods are open at both ends.
3. Cleaning apparatus according to claim 1 or claim 2 wherein, each hood houses at least one manifold, each manifold having a parameter of jets for spraying water at a wheel passing through the hood.
4. Cleaning apparatus according to claim 3 wherein, each hood has two manifolds, a first at the junction of the wall and the roof and the second at the junction of the roof and the skirt.
5. Cleaning apparatus according to claim 3 or claim 4 wherein, the manifolds are supplied from a high pressure positive displacement pump.
6. Cleaning apparatus according to any preceding claim wherein, the support surface is a mesh surface through which water can drain.

7. Cleaning apparatus according to any preceding claim incorporating means for detecting the presence of a trolley and activating cleaning apparatus in response to a detected trolley.
8. Cleaning apparatus according to any preceding claim incorporating an auxiliary cleaning facility for cleaning golf clubs.
9. Cleaning apparatus according to claim 9 wherein, the auxiliary cleaning facility comprises a trough into which the heads of golf clubs may be placed and a plurality of jets for spraying water at the golf clubs in the trough.
10. Cleaning apparatus according to any preceding claim comprising means to assist removal of water from the trolley and/or clubs.
11. Cleaning apparatus according to Claim 10 wherein, the means to assist removal of water comprise air jets.







2/2

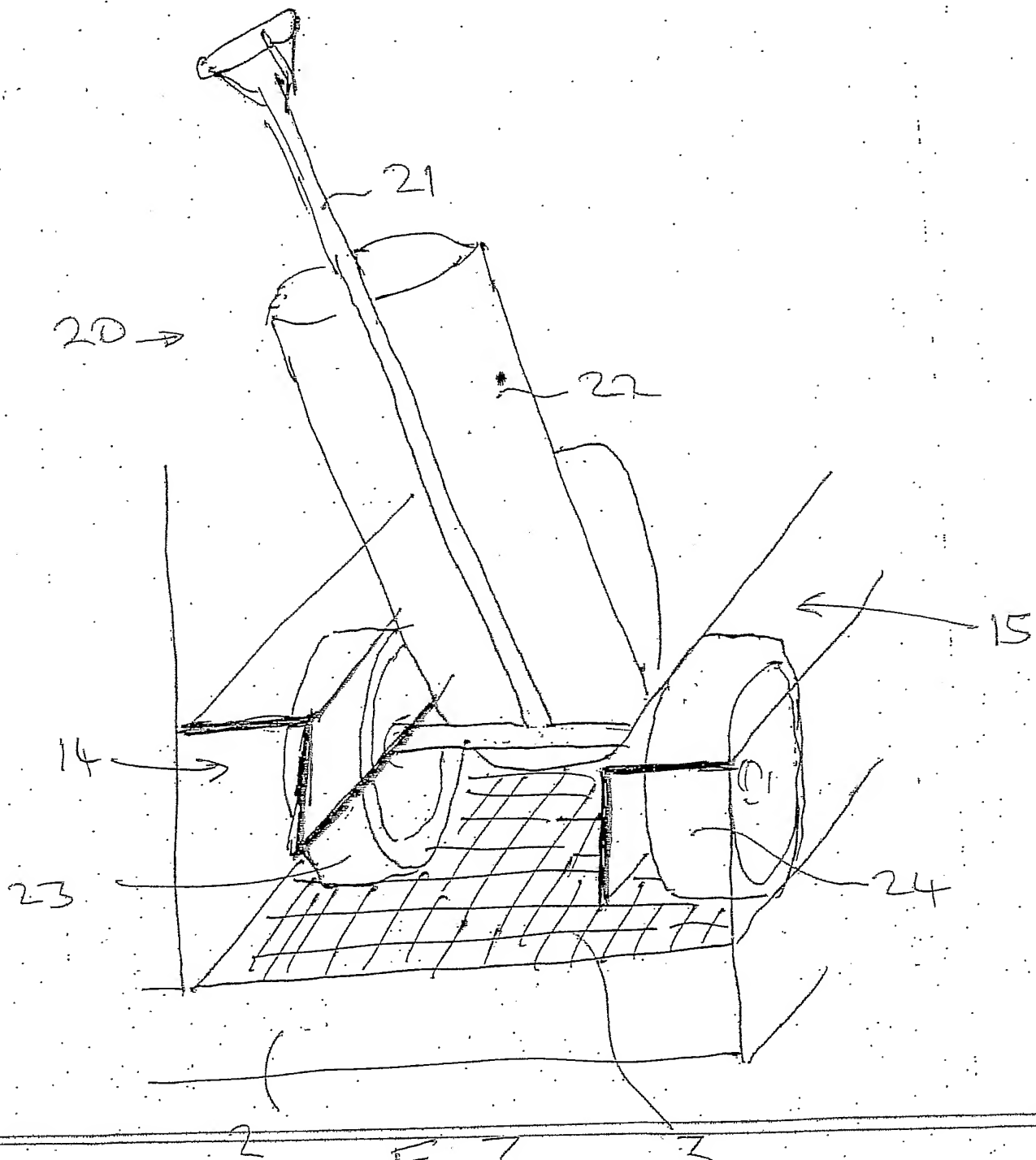


Fig 3

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